

PATENTAtty. Dkt. No. ROC920010091US1
MPS Ref. No.: IBMK10091**IN THE CLAIMS:**

Please and amend the claims as follows:

1. (Currently Amended) A method of displaying an optimized version of source code ~~compiler-optimized source code~~, the method comprising:
generating, from optimized object code, an the optimized version of source code,
wherein the optimized version of source code corresponds to for an original version of the source code, modified to reflect an optimization in the optimized object code; and
displaying the optimized version of source code on an output device to visually distinguish ~~indicate a change performed~~ changes to the original version of the source code in accordance to a compiler optimization, relative to the optimized version.
2. (Currently Amended) The method of claim 1 wherein the generating is performed in response to a request containing a type of a compiler optimization to be ~~applied on~~ used by a compiler program when compiling the original source code.
3. (Currently Amended) The method of claim 1 wherein the optimized source code comprises a decompiled version of ~~an~~ the optimized object code, generated from the original source code.
4. (Original) The method of claim 1 wherein the original source code is compiled according to a compiler optimization comprising at least one of an inlining optimization, a common subexpression elimination, a loop invariant code removal, and a dead code elimination.
5. (Original) The method of claim 4 wherein displaying comprises:
displaying a number of times a procedure call in the original source code is inlined.

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6. (Currently Amended) The method of claim 1 wherein the ~~original source~~ optimized object code comprises a bytecode generated using a Java compiler.
7. (Currently Amended) The method of claim 6 further comprising:
displaying a number of times a procedure in the original source code is executed by an interpreter of a ~~visual~~ virtual machine program before being compiled by a run-time compiler of the ~~visual~~ virtual machine program.
8. (Original) The method of claim 1 wherein the optimized source code and the original source code are simultaneously displayed in separate windows of a user interface on the output device.
9. (Currently Amended) The method of claim 1 wherein displaying comprises:
identifying a difference between the original source code and the optimized source code, where the difference is due to the compiler optimization ~~on-used by a~~ compiler program when compiling the original source code to generate the optimized ~~source object~~ code; and
highlighting the differences on a user interface on the output device.
10. (Original) The method of claim 1 wherein displaying comprises:
identifying a failed optimization on the original source code;
determining a reason for the failed optimization from a compiler used to optimize the source code; and
displaying the reason for the failed optimization.
11. (Original) The method of claim 10 wherein the identifying is performed in response to a user query.
12. (Currently Amended) A method of displaying compiler optimized source code, comprising:
generating an object code from an original version of source code;

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optimizing the object code to produce an optimized object code;

decompiling the optimized object code to produce an optimized version of the source code, wherein the optimized version of source code corresponds to an original version of the source code, modified to reflect an optimization in the optimized object code; and

simultaneously displaying the optimized source code and the original source code in separate windows of a user interface on an output device to visually indicate a change to the original source code as a result of the optimizing.

13. (Original) The method of claim 12 wherein generating is performed in response to a request containing a type of a compiler optimization to be applied on the original source code to generate the optimized source code.

14. (Original) The method of claim 12 wherein the original source code is compiled according to a compiler optimization comprising at least one of an inlining optimization, a common subexpression elimination, a loop invariant code removal, and a dead code elimination.

15. (Original) The method of claim 12 wherein simultaneously displaying comprises:

identifying a difference between the original source code and the optimized source code, where the difference is due to the compiler optimization on the original source code; and

highlighting the differences on a user interface on the output device.

16. (Currently Amended) An apparatus for displaying an optimized version of source code ~~compiler-optimized source code~~, the apparatus comprising:

a memory for storing a program editor, a compiler program and a decompiler program;

an output device for displaying the optimized version of source code ~~an optimized source code~~; and

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a processor, for executing the program editor, the compiler program and the decompiler program, the processor being configured to:

generate, from optimized object code, the optimized version of source code, wherein the optimized version of source code corresponds to an original version of the source code, modified to reflect an optimization in the optimized object code, and

provide, to the output device, the optimized version of the source code to visually distinguish indicate a change performed changes to the original version of the source code in accordance to a compiler optimization, relative to the optimized version.

17. (Currently Amended) The apparatus of claim 16 wherein the source code version of optimized object code ~~optimized source code~~ is generated in response to a request containing a type of a compiler optimization to be ~~applied on~~ used by the compiler program when compiling the original version of the source code.

18. (Currently Amended) The apparatus of claim 16 wherein the compiler program is used to compile the original version of the source code in accordance ~~to~~ with a compiler optimization comprising at least one of an inlining optimization, a common subexpression elimination, a loop invariant code removal, and a dead code elimination.

19. (Currently Amended) The apparatus of claim 16 wherein the processor is further configured to:

identify a difference between the original source code and the optimized source code, where the difference is due to the compiler optimization on-used by a compiler program when compiling the original source code; and

highlight the differences on a user interface on the output device.

20. (Currently Amended) A computer readable medium storing a software program that, when executed by a processor of a computer, causes the computer to perform operations comprising:

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generating, from optimized object code, an-optimized version of source code, wherein the optimized version of source code corresponds to ~~for~~ an original version of the source code, modified to reflect an optimization in the optimized object code using a compiler, and

displaying the optimized version of source code on an output device to visually distinguish ~~indicate a change performed~~ changes to the original version of the source code in accordance to a compiler optimization, relative to the optimized version.

21. (Original) The computer readable medium of claim 20 wherein the compiler is configured to perform only the compiler optimization selected by a user.

22. (Currently Amended) The computer readable medium of claim 20 wherein generating is performed in response to a request containing a type of the compiler optimization to be applied on-used by a compiler program when compiling the original source code.

23. (Currently Amended) The computer readable medium of claim 20 wherein the optimized source code comprises a decompiled version of ~~an~~ the optimized object code, generated from the original source code.

24. (Original) The computer readable medium of claim 20 wherein the original source code is compiled according to a compiler optimization comprising at least one of an inlining optimization, a common subexpression elimination, a loop invariant code removal, and a dead code elimination.

25. (Original) The computer readable medium of claim 24 wherein displaying comprises:

displaying a number of times a procedure call in the original source code is inlined.

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26. (Currently Amended) The computer readable medium of claim 20 wherein the ~~original source~~ optimized object code comprises a bytecode generated using a Java compiler.
27. (Currently Amended) The computer readable medium of claim 26 further comprising:
displaying a number of times a procedure in the original source code is executed by an interpreter of a ~~visual~~ virtual machine program before being compiled by a run-time compiler of the ~~visual~~ virtual machine program.
28. (Original) The computer readable medium of claim 20 wherein the optimized source code and the original source code are simultaneously displayed in separate windows of a user interface on the output device.
29. (Currently Amended) The computer readable medium of claim 20 wherein displaying comprises:
identifying a difference between the original source code and the optimized source code, where the difference is due to the compiler optimization ~~en-used by a compiler program when compiling~~ the original source code to generate the optimized ~~source object~~ code; and
highlighting the differences on a user interface on the output device
30. (Original) The computer readable medium of claim 20 wherein displaying comprises:
identifying a failed optimization on the original source code;
determining a reason for the failed optimization from a compiler used to optimize the source code; and
displaying the reason for the failed optimization.
31. (Original) The computer readable medium of claim 20 wherein the identifying is performed in response to a user query.

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32. (Currently Amended) A computer readable medium storing a software program that, when executed by a processor of a computer, causes the computer to perform operations comprising:

generating an object code from an original source code using a compiler;

optimizing the object code to produce an optimized object code;

decompiling the optimized object code to produce an optimized source code corresponding to the original version of the source code; and

simultaneously displaying the optimized source code and the original source code in separate windows of a user interface on an output device to visually indicate a change to the original source code as a result of the optimizing.

33. (Original) The computer readable medium of claim 32 wherein the compiler is configured to perform only the compiler optimization selected by a user.

34. (Original) The computer readable medium of claim 32 wherein generating is performed in response to a request containing a type of a compiler optimization to be applied on the original source code to generate the optimized source code.

35. (Original) The computer readable medium of claim 32 wherein the original source code is compiled according to a compiler optimization comprising at least one of an inlining optimization, a common subexpression elimination, a loop invariant code removal, and a dead code elimination.

36. (Original) The computer readable medium of claim 32 wherein simultaneously displaying comprises:

identifying a difference between the original source code and the optimized source code, where the difference is due to the compiler optimization on the original source code; and

highlighting the differences on a user interface on the output device.